

HIGH IMPACT - LNG FACILITY

Name of Operator:		
H.Q. Address:	System/Unit Name and Address:	
Co. Official: Phone No.: Fax No.: Emergency Phone No.: Operator ID#:	Phone No.: Fax No.: Emergency Phone No.: Unit Record ID#: Activity Record ID#:	
Persons Interviewed	Titles	Phone No.
OPS Representative(s):		Date(s):
Company System Maps (copies for Region Files):		
Type of facility: Base Load Satellite Peak Shaving Mobile/Temporary		
<small>Note: Mobile and temporary LNG facilities may meet the requirements of Section 2-3.4 of NFPA 59A (1996 edition) in lieu of the requirements of Part 193 per 193.2019.</small>		
Year Facility Was Placed In Operation: Liquefaction Rate, MMCFD: Type Of Liquefaction Cycle: Number Of Vaporizers & Capacities: Storage Take Statistics - (Fabricator, Volumes, Materials,		
Comments:		

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.2503	NORMAL OPERATING PROCEDURES	S	U	N/A	N/C
	Operating Procedures must include:				
	? (a) Monitoring operations and/or buildings for fire, malfunctions which may cause hazardous or unsafe conditions (193.2805(a)(2))				
	? (b) Startup and shutdown, including initial startup?				
	? (c) Recognizing abnormal operating conditions?				
	? (d) Purging (193.2517)				
	? (e) Maintaining vaporization and liquefaction rates within design limits for all associated equipment and piping.				
	? (f) Cooldown of components? (193.2505)				
.2509(b)	EMERGENCY PROCEDURES				
	? Identify the types and places where emergencies can occur, <u>other than fires</u> (malfunctions, structural, personnel error, activities adjacent to plant)?				
	Written procedures must provide the following:				
	? (a) Responding to controllable emergencies?				
	? (b) Recognizing and acting on uncontrollable emergencies?				
	? (c) Coordinating with local officials for evacuation plans?				
	? (d) Cooperating with local officials and keeping them advised of:				
	1. Types, quantity and location of fire control equipment at the LNG plant.				
	2. Potential hazards at the plant, including fires.				
	3. Communications and emergency control capabilities at the plant.				
	4. The status of each emergency.				
.2511	PERSONNEL SAFETY PROCEDURES				
	? Personnel must be provided with protective clothing and equipment while performing emergency response duties.?				
	? Personnel at fixed locations must be provided with a means of protection from heat or with an escape route in possible thermal radiation areas (see 193.2057)?				
	? Is first aid equipment provided, available and marked?				
.2017	COMMUNICATIONS SYSTEMS PROCEDURES				
	? 193.2519(a) Primary communications system (verbal) for all employees and their assigned work stations.				
	? (b) Plants over 70,000 gallons storage capacity, must provide an emergency communication system separate from the primary and security communication systems in 193.2909.				
	? (c) Each communication system must have a backup power supply.				
.2605(b)	FIRE PROTECTION MAINTENANCE PROCEDURES				
	? 193.2611 (a) Maintenance of fire protection. (scheduling equipment so that a minimum of equipment is out of service at any one time)				
	? (b) Maintaining access routes for fire fighting equipment. (all weather conditions)				
	! Removing a spool piece				
	! Installing a blind flange				

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.2605(b)	CONTROL SYSTEMS PROCEDURES			S	U	N/A	N/C
?	193.2619	(a)	Control systems must be calibrated to operate within design limits.				
	?	(b)	Control systems out of service for 30 days or more must be inspected and tested before being returned to service.				
	?	(c)	Control systems in service but not normally in operation;				
		!	Pressure relief valves (include lifting and reseating the valve). (tested 1yr/15mo.)				
		!	Control systems used seasonally (prior to each season)				
		!	Fire protection control systems (at least every 6 months)				
?	(d)		All control systems normally in use. (15mo)				
.2605(b)	TRANSFER HOSE TESTING PROCEDURES						
?	193.2621	(a)	Hoses must be tested to maximum pump pressure or relief valve setting. (1yr/15mo)				
	?	(b)	Are hoses visually inspected for damage and defects before each use?				
.2605(b)	CORROSION CONTROL PROCEDURES (External, internal and atmospheric)						
?	193.2625	(a)	Components must be identified that can corrode and affect plant reliability and safety. (internal, external, atmospheric)				
	?	(b)	Components identified above must be protected from corrosion, or inspected and replaced on a regular schedule.				
.2605(b)	EXTERNAL CORROSION CONTROL PROCEDURES: Buried or submerged components						
?	193.2629	(a)	Each buried or submerged component must be;				
	?	(1)	Constructed of corrosion-resistant materials; or				
	?	(2i)	External protective coating in accordance with §192.461				
	?	(2ii)	Cathodic protection in accordance with 192.463 (within one year of construction or installation)				
	?	(b)	Electrically interconnected components under CP must be protected as a unit				
.2605(b)	INTERNAL CORROSION CONTROL PROCEDURES						
?	193.2631	(a)	Components subject to internal Corrosion must be protected by;				
		!	Using corrosion resistant materials; or				
		!	Coatings, inhibitors, or other means				
.2605(b)	ATMOSPHERIC CORROSION PROCEDURES						
?	193.2627		All components subjected to atmospheric corrosion attack must be protected by:				
		!	Selecting component materials with corrosion resistant properties				
		!	Coating or jacketing				
			Inspections must be done per a program of scheduled maintenance under 193.2605.				
.2605(b)	INTERFERENCE CURRENT PROCEDURES						
?	193.2633	(a)	Components subject to electrical current interference must be protected by a continuing program to minimize the detrimental effects of the currents.				
	?	(b)	Impressed current power sources must be installed and maintained to prevent interference with communications and plant control systems.				

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.2605(b)	CORROSION CONTROL MONITORING PROCEDURES	S	U	N/A	N/C
	? 193.2635 (a) Each buried or submerged component inspected (1yr/15 months)				
	? (b) Rectifiers, reverse current switches, diodes and key interference bonds (6x/yr not exceed 2 ½ mo)				
	? (c) Atmospheric corrosion inspections (3yrs)				
	? (d) Internal corrosion inspections with corrosion coupons (2x/yr not exceed 7½ months)				
	? 193.2637 Prompt corrective or remedial action to correct corrosion deficiencies (atmospheric, internal, external)				
.2713(a)	TRAINING; OPERATION AND MAINTENANCE PROCEDURES				
	? 1 <u>New Permanent Maintenance, Operating and Supervisory Personnel ONLY.</u> Training and Instructions (written plan);				
	? (i) Characteristics of LNG and other flammable fluids handled at the plant.				
	! Low boiling point and storage temperature (-260°F).				
	! Flammability of LNG (5% to 15% vapor in air)				
	! LNG is odorless.				
	! Boil-off characteristics.				
	! Reaction to water and water spray.				
	(ii) Potential Operational & Maint. hazards of LNG.				
	? 2 <u>All Personnel</u> training and instruction (written plan);				
	? (i) To carry out Emergency procedures described in 193.2509 that relate to their assigned functions.				
	? (ii) First aid.				
	? 3 <u>All Operating and Appropriate Supervisory Personnel ONLY.</u> Training and Instructions (written plan)				
	? (i) To understand detailed instructions on facility operations including:				
	! Controls				
	! Functions				
	! Operating Procedures				
	? (ii) LNG transfer procedures?				
.2717(b)	A review of the material covered during the Initial Instruction training for O&M procedures as described above must be conducted at intervals not exceeding 2 years.				
.2717	TRAINING: FIRE PROTECTION				
	? (a) All personnel involved in Maintenance and Operations, including Immediate Supervisors, must be trained in accordance with a written plan of initial instruction, including fire drills.				
	The training program must include:	S	U	N/A	N/C
	? (1) Fire prevention procedures in accordance with §193.2805(b).				
	? (2) Familiarity with the potential fire sources identified in §193.2805(a).				
	? (3) The potential hazards for the fires identified in 193.2817(a).				
	? (4) The responsibilities of each person in the event of a fire in accordance with the procedures established in §193.2509 and the proper use of emergency equipment provided in §193.2817.				
	? (b) Refresher training, including fire drills, must be provided at intervals not exceeding 2 years?				

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.2807	FIRE PROTECTION - SMOKING	S	U	N/A	N/C
	? (a) Smoking is prohibited in areas where there is a potential for the presence of flammable fluids				
	? (b) " <u>SMOKING PERMITTED</u> " areas must be prominently marked.				
	? (c) "NO SMOKING" signs must be displayed in areas where smoking is prohibited				
.2819	GAS DETECTION				
	? (a) Areas identified as potential locations for the presence of flammable fluids and in which a hazard to persons or property could exist must be monitored by fixed gas detectors.				
	? (b) Fixed gas detectors must signal:				
	? ! Audible alarms in the area of detection				
	? ! Audible and visual alarms in attended control room/station				
	? (c) Gas detection alarms set at 25% or less of LEL of gas monitored.				
	? (d) 2 portable gas detectors must be available for use at all times.				
	? (e) All enclosed buildings connected by piping or uninterrupted conduits to a source of flammable fluid must be monitored by fixed gas detectors including;				
	? ! visible or audible alarms outside building				
.2821	FIRE DETECTION				
	? (a) Areas identified as potential locations for the presence of flammable fluids and in which a hazard to persons or property could exist must also be monitored by fire detectors. (193.2805)				
	? (b) Fire detectors must signal:				
	? ! Audible alarms in the area of detection				
	? ! Audible and visual alarms in attended control room/station				

	RECORDS (5 year minimum retention)	S	U	N/A	N/C
.2639	CONTROL SYSTEMS				
	? 193.2619(c) Relief Valves (1yr/15mo)				
	? 193.2619(c) Automatic Shutdown Devices (1yr/15mo)				
	? 193.2619(c)(1) Seasonal Control Systems (Liq/Vaporization) (prior to use)				
	? 193.2619(c)(2) Fire Protection Control Systems (every 6 months)				
	? 193.2619(d) Control Systems normally in use (1yr/15mo)				
	? 193.2621 Transfer Hose Inspection Records (1yr/15mo)				
	? 193.2623 LNG Storage Tank Inspections Records				
	? ! Foundation and tank movement				
	? ! Inner tank leakage				
	? ! Effectiveness of insulation				
	? ! Frost heave				
.2639(c)(2)	CORROSION CONTROL				
	? 193.2635(a) Cathodic Protection Records (1yr/15mo)				
	? 193.2635(b) Rectifier Inspection Records (6x/yr - 2½ mo)				
	? 193.2635(c) Critical Interference Bonds (6x/yr -2½ mo); Non Critical Interference Bonds (15 mo)				
	? 193.2635(d) Atmospheric Corrosion Records (3yr)				
	? 193.2635(e) Internal Corrosion monitoring Records (2½ - 7½ months)				
	? 193.2639(b) Records or Maps showing CP components, bonded structures.				

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.2719(a)	TRAINING RECORDS	S	U	N/A	N/C
	? 193.2709(a) Initial Training - Security				
	! recognize breaches of security				
	! carry out security procedures related to assigned function.				
	! recognize conditions where security assistance is needed.				
	? 193.2709(b) Follow-up Security Training (every 2 years)				
	? 193.2713(a) Initial Training - Operations and Maintenance				
	! characteristics and hazards of LNG				
	! Emergency Procedures related to assigned duties				
	! First-aid				
	! Facility Operations, controls, functions				
	! LNG Transfer Operations				
	? 193.2713(b) Follow-up O&M Training (every 2 years)				
	? 193.2717(a) Initial Training - Fire Protection incl. fire drills				
	! review of fire prevention plan (193.2805).				
	! review potential causes and potential fire prone areas.				
	! review types, sizes, and predictable consequences of a fire.				
	! review assigned fire control duties and use of equipment.				
	? 193.2717(b) Follow-up Fire Protection Training (every 2 years)				
	193.2711 Personnel Health Records (testing per requirement of operators written health plan)				

PERFORMANCE REVIEW of FIELD and RECORDS		S	U	N/A	N/C
193.2519(c)	Backup power supply for communication systems.				
193.2607	? LNG plant grounds maintenance and upkeep (grass, trash,etc)				
193.2609	? Support systems (foundations, pipe rack supports, etc.)				
193.2615	? Auxiliary Power Supply				
193.2621(a)	? Control Systems Calibration				
193.2621(b)	? Transfer hose/s				
193.2623	? Storage Tanks				
193.2635	? Cathodic Protection (CP Levels)				
193.2627	? Atmospheric Corrosion				
193.2807	? Smoking and No Smoking Signs				
193.2817	? Fire Fighting Equipment				
	! portable fire extinguishers				
	! protective clothing, equipment, clearly marked				
	! operating instructions attached to fire control equipment and placed at the location of controls of fixed equipment				
193.2819	? Gas Detection System				
193.2821	? Fire Detection System				
193.2817	? Warning Signs - placed along fence or boundary, visible at 100 ft at night				

FIELD NOTES: